

REMARKS

Applicants respectfully request favorable reconsideration of this application, as amended.

Claims 1-3, 5, and 7-19 are previously presented, with Claims 1 and 5 being independent. Independent Claims 20 and 21 have been added to provide more comprehensive protection for Applicants' invention. Claims 15-17 have been canceled without prejudice or disclaimer, to reduce the issues. Thus, Claims 1-3, 5, 7-14, and 18-21 are pending in this application. Additionally, the claims have been amended for clarity and to better conform to U.S. practice.

Turning to the merits, Claims 1-3, 5, and 7-19 were rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over "Aluminum and Aluminum Alloys" pages 220, 718-719, and 722. Applicants respectfully traverse.

Applicants respectfully maintain the position and arguments provided in the previous Response filed December 27, 2007, and, additionally, offer the following remarks.

The common belief at the time of Applicants' invention was that low magnesium levels produce high quality castings. Applicants' invention confirms this to be the case at low solidification rates (i.e., higher Dendritic Arm Spacing or DAS), while at higher solidification rates (i.e., lower DAS), the magnesium content corresponds to improved alloy quality and therefore improved mechanical properties. See, e.g., Applicants' specification page 10, lines 5-11 and Figure 1. This unexpected result demonstrates an unobvious difference between Applicants' claimed invention and the applied references.

This unobvious difference, combined with the admission that the applied reference does not disclose what phases are present in the alloy, can lead only to the conclusion that it would not have been obvious to persons of ordinary skill in the art to produce the claimed alloy, in which the sole or predominant iron-containing phase is β phase that has formed as a transformation product of the π phase. There is no evidence of record indicating that persons of ordinary skill were taking this into account. Rather, as evidenced in Applicants' specification, both the π and β phases were seen as being detrimental to mechanical properties (see page 3, lines 12-13) and, when those deleterious effects were to be reduced or eliminated, those skilled in the art took measures to eliminate the π phase -- rather than transform it to β phase -- by the addition of beryllium, for example.

Applicants' claimed invention is patentably distinguished over the applied references. The rejections under 35 U.S.C. §§ 102(b) and 103(a) are therefore untenable and should be withdrawn.

New independent Claims 20 and 21 are also believed to distinguish patentably over the applied references. Note, for example, the recitation in Claim 20 that for a Magnesium content of 0.40 to 0.45 wt% the Quality Index does not vary substantially with small changes in the Magnesium content. This means the claimed alloy at the peak Quality Index is less sensitive to changes in Magnesium content, as compared to other alloys. Accordingly, consistency in the mechanical properties of the claimed alloy may be maximized. Note further, the step in Claim 21 where the casting is solution heat treated for 2 to 4 hours to produce desired levels of transformation of π phase to β phase. The duration of the heat treatment is substantially different than any duration that may be suggested by the applied references.


Applicants believe that the currently pending claims are allowable and respectfully request that the Examiner issue a Notice of Allowance.

Should the Examiner believe that any further action is necessary to place this application in better form for allowance, the Examiner is invited to contact Applicants' representative at the telephone number listed below.

The Commissioner is hereby authorized to charge to Deposit Account No. 50-1165 (T2211-906224) any fees under 37 C.F.R. §§ 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been separately requested, such extension is hereby requested.

Respectfully submitted,

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